

AMENDMENTS TO THE CLAIMS

The listing of claims below replaces all prior versions of claims in this application.

1. (Currently Amended) A rotary table system comprising:

a guide apparatus; and

a rotary table mounted on said guide apparatus;

said guide apparatus including a ring-shaped integrated rail having no discontinuity in a travel direction thereof, and a plurality of guide blocks that are assembled to said rail from a direction of their surfaces opposing said rail;

~~wherein a top surface of said rail opposite to a surface thereof opposing said guide blocks and an underside of said rotary table are joined together, and~~

wherein each of said plurality of guide blocks includes a U-shaped cross-sectional opening and a portion of said rail is fitted into the U-shaped cross-sectional opening from above the opening, and

wherein a top surface of said rail opposite to the portion of said rail fitted into the U-shaped cross-sectional opening and an underside of said rotary table are joined together.

2. (Original) A rotary table system according to claim 1, wherein said rail has a substantially L-shaped cross-sectional configuration formed from a vertical portion and a horizontal portion extending from an upper end of said vertical portion in a radial direction of said rotary table.

3. (Previously Presented) A rotary table system according to claim 1, further comprising:
a tape scale provided on an outer peripheral surface of said rail; and
a detecting mechanism that faces the outer peripheral surface of said rail and detects an amount of rotation of said rotary table by detecting said tape scale.

4. (Previously Presented) A rotary table system according to claim 1, further comprising:
mounting sections having mounting surfaces to which said guide blocks are secured,
said mounting sections being equally spaced along a same circumference on a base that is a separate member from said rail and guide blocks.

5. (Currently Amended) A rotary table system according to claim 1, wherein said rail has a plurality of rolling element rolling surfaces formed along the travel direction of said rail; and
said guide blocks each including:
a guide block body having load rolling element rolling surfaces that, said load rolling element rolling surfaces of said guide block face said rolling element rolling surfaces of said rail
to form load rolling element rolling passages in cooperation with said rolling element rolling
surfaces, said guide block body further having rolling element relief bores ~~associated with said~~
~~load rolling element rolling surfaces~~; and
end plates provided at both ends of said guide block body in the travel direction of said rail, said end plates each having rolling element direction change passages,
wherein said rolling element direction change passages, said load rolling element rolling

passages and said rolling element relief bores that form rolling element recirculation passages in cooperation with said load rolling element rolling passages and said rolling element relief bores in which a plurality of rolling elements roll and recirculate as the rail moves.

6. (Previously Presented) A rotary table system according to claim 2, further comprising:
a tape scale provided on an outer peripheral surface of said rail; and
a detecting mechanism that faces the outer peripheral surface of said rail and detects an amount of rotation of said rotary table by detecting said tape scale.

7. (Previously Presented) A rotary table system according to claim 2, further comprising:
mounting sections having mounting surfaces to which said guide blocks are secured, said mounting sections being equally spaced along a same circumference on a base that is a separate member from said rail and guide blocks.

8. (Previously Presented) A rotary table system according to claim 3, further comprising:
mounting sections having mounting surfaces to which said guide blocks are secured, said mounting sections being equally spaced along a same circumference on a base that is a separate member from said rail and guide blocks.

9. (Currently Amended) A rotary table system according to claim 2, wherein said rail has a plurality of rolling element rolling surfaces formed along the travel direction of said rail;

said guide blocks each including:

a guide block body having load rolling element rolling surfaces ~~that, said load rolling~~
element rolling surfaces of said guide block face said rolling element rolling surfaces of said rail
to form load rolling element rolling passages in cooperation with said rolling element rolling
surfaces, said guide block body further having rolling element relief bores ~~associated with said~~
~~load rolling element rolling surfaces~~; and

end plates provided at both ends of said guide block body in the travel direction of said
rail, said end plates each having rolling element direction change passages,

wherein said rolling element direction change passages, said load rolling element rolling
passages and said rolling element relief bores that form rolling element recirculation passages in
~~cooperation with said load rolling element rolling passages and said rolling element relief bores~~
in which a plurality of rolling elements roll and recirculate as the rail moves.

10. (Currently Amended) A rotary table system according to claim 3, wherein said rail has
a plurality of rolling element rolling surfaces formed along the travel direction of said rail;

said guide blocks each including:

a guide block body having load rolling element rolling surfaces ~~that, said load rolling~~
element rolling surfaces of said guide block face said rolling element rolling surfaces of said rail
to form load rolling element rolling passages in cooperation with said rolling element rolling
surfaces, said guide block body further having rolling element relief bores ~~associated with said~~
~~load rolling element rolling surfaces~~; and

end plates provided at both ends of said guide block body in the travel direction of said rail, said end plates each having rolling element direction change passages,

wherein said rolling element direction change passages, said load rolling element rolling passages and said rolling element relief bores that form rolling element recirculation passages in cooperation with said load rolling element rolling passages and said rolling element relief bores in which a plurality of rolling elements roll and recirculate as the rail moves.

11. (Currently Amended) A rotary table system according to claim 4, wherein said rail has a plurality of rolling element rolling surfaces formed along the travel direction of said rail;

said guide blocks each including:

a guide block body having load rolling element rolling surfaces ~~that, said load rolling element rolling surfaces of said guide block face said rolling element rolling surfaces of said rail to form load rolling element rolling passages in cooperation with said rolling element rolling surfaces, said guide block body further having rolling element relief bores associated with said load rolling element rolling surfaces; and~~

end plates provided at both ends of said guide block body in the travel direction of said rail, said end plates each having rolling element direction change passages,

wherein said rolling element direction change passages, said load rolling element rolling passages and said rolling element relief bores that form rolling element recirculation passages in cooperation with said load rolling element rolling passages and said rolling element relief bores in which a plurality of rolling elements roll and recirculate as the rail moves.